

## ABSTRACT OF THE DISCLOSURE

The present invention provides a technique for converting a multi-threaded application configured to execute on a uniprocessor (UP) system to one that executes on a multiprocessor (MP) system. Unlike previous approaches, a novel scheduling technique  
5 is employed so that different UP-coded user-level threads ("sthreads") can execute concurrently in the MP system without having to rewrite their original code. To that end, the UP-coded sthreads are organized into different concurrency groups, each of which defines a set of one or more sthreads not permitted to execute concurrently. By grouping the UP-coded sthreads in this manner, different concurrency groups can be scheduled to  
10 execute their UP-coded sthreads at substantially the same time without incorporating traditional synchronization mechanisms into the sthreads' original UP code.